

What is claimed is:

1-17. (cancelled)

18. (new) A permeable material having a permeability of at least about 50 cD characterized by the material being resin-bonded and made from a composition comprising:

- a) a refractory aggregate;
- b) 0.5-15 wt.% of at least one oxygen getter; and
- c) a sufficient amount of binder.

19. (new) The permeable material of claim 18, characterized by the refractory aggregate comprising at least 80 wt.% of the composition, and the refractory aggregate including:

- a) at least about 60 wt.% aggregate having a particle size of +80 mesh or higher;
- b) less than 20 wt.% aggregate having a particle size of -80 to +325 mesh; and
- c) less than 20 wt.% aggregate having a particle size less than -325 mesh.

20. (new) The permeable material of claim 19, characterized by the refractory aggregate comprising at least one oxide selected from the group consisting of alumina, magnesia, silica, zirconia, calcia, and mixtures and compounds thereof.

21. (new) The permeable material of claim 18, characterized by the oxygen getter comprising at least one compound selected from the group consisting of boron compounds, carbides, nitrides, and reactive metals.

22. (new) The permeable material of claim 21, characterized by the reactive metal being selected from the group consisting of aluminum, magnesium, silicon, titanium, and mixtures and alloys thereof.
23. (new) The permeable material of claim 18, characterized by the binder being selected from the group consisting of phenolic resins, carbonaceous binders, starch, and ligno-sulfonates.
24. (new) The permeable material of claim 18, characterized by the composition comprising a fugitive additive capable of increasing permeability during heating of the permeable material.
25. (new) The permeable material of claim 24, characterized by the fugitive additive comprising an organic compound.
26. (new) The permeable material of claim 18, characterized by the permeable material lining at least an inner surface of a refractory nozzle for use in the casting of molten metal, wherein the nozzle includes an inlet, an outlet, an outer surface, the inner surface defining a bore fluidly connecting the inlet and the outlet, and a top surface surrounding the inlet, the nozzle adapted to receive a flow of inert gas and comprising an impermeable material surrounding at least a portion of the permeable composition and substantially preventing diffusion of gases through the outer surface.
27. (new) The permeable material of claim 26, characterized by the impermeable material being selected from the group consisting of metal and an impermeable refractory composition.
28. (new) The permeable material of any one of claim 26, characterized by the impermeable refractory composition being made from a composition

comprising 50-80 wt.% refractory aggregate, 1-10 wt.% binder, and 0.5-15 wt.% reactive metal.

29. (new) The permeable material of claim 26, characterized by the impermeable composition comprising 65-80 wt.% fused alumina, 2-30 wt.% calcined alumina, 1-10 wt.% binder, 0.5-10 wt.% aluminum metal, up to 15 wt.% zirconia, and less than 3 wt.% silica.
30. (new) The permeable material of claim 26, characterized by the nozzle including an inert gas delivery system.
31. (new) The permeable material of claim 30, characterized by the gas delivery system being selected from the group consisting of channels, grooves and devices.
32. (new) The permeable material of claim 26, characterized by the nozzle being made by:
  - a) placing a first composition adapted to be the permeable material around a mandrel in a mold;
  - b) placing a second composition adapted to be the impermeable composition at least partially around the first composition;
  - c) pressing the first and second compositions together at a pressure of at least about 3000 psi to form a green piece;
  - d) curing the green piece at a temperature less than 800°C to form the nozzle.
33. (new) The permeable material of claim 32, characterized by the first composition comprising:
  - a) at least 80 wt.% refractory aggregate including a least about 60 wt.% aggregate having a particle size of +80 mesh or higher, less than 20 wt.%

aggregate having a particle size of -80 and +325 mesh, and less than 20 wt.% aggregate having a particle size less than -325 mesh;

- b) 0.5-15 wt.% of at least one oxygen getter; and
- c) a sufficient amount of binder.

34. (new) The permeable material of claim 33, characterized by the second composition comprising:

- a) 50-90 wt.% refractory aggregate;
- b) 1-10 wt.% binder; and
- c) 0.5-15 wt.% reactive metal